

Ledar Chemical - Sept. 30, 2009

Jay Rich	ADEQ	rich@adeq.state.ar.us	501-682-086
Alan Nye	CTEH	anye@cteh.com	501-801-854
MARK HEMINGWAY	AMEC	mark.hemingway@amec.com	512-330-3402
Dave Roberson	de maximis	dave@demaximis.com	281-363873
Jim Rigg	ADEQ	rigg@adeq.state.ar.us	
Annette Cusher	ADEQ	cusher@adeq.state.ar.us	
Clay McDaniel	ADEQ	mcDaniel@adeq.state.ar.us	
Thomas Frank Knight	CTEH	thasfrank@cteh.com	
Kelly Beck	AMEC	Kelly.Beck@amec.com	512-330-34

## CEDAR CHEMICAL FEASIBILITY STUDY

1. Section 5.0 – The following items in this section are somewhat confusing in regards to the potential exposure pathways that are identified for each Facility media. The FS indicates the vapor intrusion pathway for selected COPCs were evaluated for the on-site soils and perched zone groundwater. However, the vapor intrusion pathway was not included as a pathway (Appendix A).

For the Alluvial Aquifer Groundwater, ingestion and irrigation use is considered potential exposure pathways. However, these pathways were not considered for selection of COPCs. Vapor intrusion was the only pathway considered for selection of COPCs in the alluvial aquifer groundwater. However, the vapor intrusion pathway is not included as a pathway in the body of the FS.

These differences need to be clarified and amended in an updated FS.

2. Section 6.2 Perched Zone Groundwater – it is not a feasible option to simply utilize monitored natural attenuation (MNA) for the perched zone due to the fact it is a known continued source for the alluvial zone contamination. Under corrective action, one must actively remediate known sources of contamination.

3. Section 8.0 - It is a known fact there are some drums that are believed to be intact within the drum vault. The contents of these intact drums should be characterized separate from the water saturated sandy backfill material discovered during the exploration activities conducted at the drum vault location. Please clarify this in the text of the FS.

There is no mention of sampling the drum vault side walls or bottom. The FS should include a performance standard to be met to determine the appropriate "clean-up level" to be achieved before the drum vault is backfilled/sealed.

### Appendix A – Derivation of Human Health Risk-Based Concentrations Soil and Groundwater

- Allan Nigh
1. Page 1, Section 2 – It appears the original list of COCs was modified. Whereas the 2007 HHMSSLs were appropriate for use in 2008 if any additional modifications are going to be made to the COC list then the most recent version of HHMSSLs (2009) should be utilized. *Here's the potential COCs, but some are COCs considered by others in the drums*
  2. Section 2.0 states "Groundwater data considered in this assessment are from the 2008 Facility Investigation Report ( AMEC Geomatrix 2009)." There are many COCs omitted

in the Feasibility Study that were detected in groundwater across the site according to the Facility Investigation Report 2008. Please clarify.

3. Page 2 – Arsenic had a maximum concentration of 128 mg/kg. Arsenic was not originally considered a COPC based on conclusions from the Current Conditions Report, which indicated arsenic concentrations are consistent with background or may result from agricultural practices. However, 128 mg/kg is significantly above background and agricultural activities have not been known to occur on the site. In addition, there were several other elevated detections of arsenic from the 2008 data. Arsenic should be included in the list of COCs and fully evaluated. Please amend.

4. Page 2 and 3, Section 2.2; Table 3 – The selection of COPCs in soil was limited to the 0 to 10 feet bgs soil profile. The COPCs in these soils were selected based on comparison to USEPA industrial outdoor worker soil screening levels (2007 HHMSSLs). COPCs in soil at depths greater than 1 foot bgs should be compared to the most recent groundwater protection standards. In this case, the MCL-based SSLs from the April 2009 Regional Screening Levels are applicable. If no MCL-based SSL is available for a particular chemical in these tables, the Risk-based SSL should be used. Please amend.

- How do ever step chasing a moving target / COCs in APPA match COCs in FIWP => were requesting new updated table*
5. Page 4, Section 3.2.1; Tables 1, 2A, and 5 - Only detected chemicals that are sufficiently volatile in perched on-site groundwater that may result in exposure via the vapor intrusion pathway were selected as COPCs and RBCs calculated, accordingly. The direct contact pathway for COPCs in on-site groundwater was not considered to be a complete pathway because groundwater was not considered as a potable source of water in the past and the shallow perched zone does not have sufficient yield. However, future on-site activities may include construction workers having direct contact with the shallow groundwater. Furthermore, if groundwater is not restricted at the site, future wells may be installed which may also result in future workers being exposed to on-site groundwater by the direct contact pathway. The direct contact pathway should also be included for selection of COPCs in onsite groundwater and RBCs calculated accordingly. Please amend.

6. Page 4, Section 3.2.1 - Only detected chemicals that are sufficiently volatile in alluvial off-site groundwater that may result in exposure via the vapor intrusion pathway were selected as COPCs and RBCs calculated. There is no limitation on the off-site use of the alluvial groundwater for potable purposes. Therefore, COPCs should also be selected based on the direct contact pathway (dermal, ingestion, volatilization tap water) and RBCs calculated accordingly. Please amend.

7. Table 5 – The RBCs for the chemicals in on-site groundwater on this table do not reflect the RBCs from the J&E output pages in Attachment A. However, these RBC values do match if the RBCs on the J&E output pages are multiplied by 2. Please explain this adjustment.